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2013

Ivano Caponigro, Harold Torrence, and Carlos Cisneros. (2013). Free Relative Clauses in Two Mixtec Languages.
International Journal of American Linguistics, 79(1):61-96

Published version: http://www.dx.doi.org/10.1086/668608

FREE RELATIVE CLAUSES IN TWO MIXTEC LANGUAGES[1]

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Two previously unstudied Mixtec languages—Nieves Mixtec and Melchor Ocampo Mixtec—are investigated, with special emphasis on free relative clauses and two related wh-constructions: interrogative wh-clauses and headed relative clauses. It is shown that both Mixtec languages make use of most wh-words found in interrogatives to form free relatives, i.e., non-interrogative wh-clauses like the bracketed one in *Luca tasted* [*what Adam cooked*]. Both languages exhibit the three kinds of free relatives that are attested cross-linguistically: definite free relatives (with the distribution and interpretation of definite descriptions like in the example above), existential free relatives (occurring in the complement position of existential constructions), and *-ever* free relatives (occurring as arguments like *I'll do* [*whatever you say*] or as clausal adjuncts like [*Whatever you say*], *I won't change my mind*). Similarities and differences are discussed between free relative clauses and headed relative clauses in both languages and between Mixtec wh-constructions and cross-linguistic patterns.

[KEYWORDS: Nieves Mixtec, Melchor Ocampo Mixtec, wh-words, wh-constructions, free relative clauses]

1. Introduction. This paper investigates embedded non-interrogative wh-clauses known as FREE RELATIVE CLAUSES (henceforth, FRs) in two Mixtec languages—Nieves Mixtec and Melchor Ocampo Mixtec. FRs are clauses like the bracketed one in *Luca tasted* [*what Adam cooked*]. While the literature on Mixtec languages does document interrogative wh-clauses and headed relative clauses (e.g., Bradley 1970, Daly 1973, Alexander 1980, Bradley and Hollenbach 1988*b*; 1990; 1991; 1992, Macaulay 1996, and Eberhardt 1999), we know of no reference to or description of FRs in any Mixtec language. Also, we are not aware of any previous study on Nieves Mixtec or Melchor Ocampo Mixtec.

[1] We extend our deepest thanks to all our consultants, in particular Otilio Osorio, Rufina Pérez-Ortega, Coronelio Ortega, Rogelio Martinez, and Florencio Ortiz, for sharing their Mixtec languages with us. Thanks to Barbara Hollenbach and two anonymous reviewers for their detailed insightful comments. We are solely responsible for any remaining mistakes. This work has been partially supported by a Latino Studies Research Initiative Research Grant, University of California, San Diego.

[*IJAL*, vol. 79, no. 1, January 2013, pp. 61–96]

0020–7071/2013/7901–0002$10.00

Mixtec languages together with Triqui (ISO code: trs) and Cuicatec (ISO codes: cus, cut) constitute the Mixtecan languages, a branch of the Oto-Manguean language family. The roughly 50 Mixtec languages are spoken in the Mexican region called La Mixteca, which is located in the western part of Oaxaca and in adjoining parts of Puebla and Guerrero. Due to vast emigration because of poverty, Mixtec languages are now spoken in California and other U.S. states as well.

Nieves Mixtec is spoken in and around the village of San Juan Ixpantepec Nieves in the Silacayoapan district of western Oaxaca. Taxonomically, Nieves Mixtec belongs to the Western Lowlands subgroup of the Mixteca Baja languages (Josserand 1983 and Bradley and Hollenbach 1988*a*). Melchor Ocampo Mixtec is spoken in the town of Melchor Ocampo in Guerrero state in the Alcozauca municipality and belongs to the Guerrero group (Josserand 1983). Although we are not aware of any published linguistic materials that specifically deal with either language, there are studies on geographically close Mixtec languages. In particular, there is work on Silacayoapan Mixtec (ISO code: mks), which is spoken in the same district as Nieves Mixtec (North and Shields 1976; 1977 and Shields 1988), and there is a dictionary with a short grammatical sketch for Xochapa Mixtec (ISO code: xta), which is spoken in the closest neighboring village to Melchor Ocampo (Stark, Johnson, and Guzmán 2006).

This paper contributes to the study of the Mixtec languages by investigating two previously undocumented Mixtec languages: Nieves Mixtec and Melchor Ocampo Mixtec. The paper focuses on a specific kind of wh-clause—FRs—previously undocumented within the Mixtec family, and provides further evidence on two related constructions—interrogative wh-clauses and headed relative clauses—previously documented in other Mixtec languages. More broadly, the paper aims to inspire further investigation of Nieves Mixtec and Melchor Ocampo Mixtec and of FRs in other Mixtec languages. Finally, the paper widens the typological picture of wh-clauses and their wh-words cross-linguistically (Haspelmath 1997, Cheng 1997, and Caponigro 2003).

Section **2** presents a brief overview of the main features of Nieves Mixtec and Melchor Ocampo Mixtec that are relevant for our discussion, such as word order, interrogative wh-clauses, and headed relative clauses. Section **3** provides a general introduction to FRs from a typological perspective. A precise definition of FRs is given and their cross-linguistic distribution is discussed together with a three-way taxonomy based on their interpretative properties: definite FRs, existential FRs, and *-ever* FRs. Sections **4–6** are dedicated to the discussion of each type of FR in Nieves Mixtec and Melchor Ocampo Mixtec. In particular, **4** describes definite FRs, **5** existential FRs, and **6** *-ever* FRs. Section **7** contains the conclusions and directions for future research.

The Nieves Mixtec and Melchor Ocampo Mixtec data presented below result from fieldwork conducted with native speakers of Melchor Ocampo Mixtec in Lawrence, Kansas and native speakers of Nieves Mixtec in San Diego, California and Nieves, Oaxaca, Mexico. All elicitations were conducted in Spanish.

2. Overview of some relevant aspects of Nieves Mixtec and Melchor Ocampo Mixtec.

2.1. Word order. In both Nieves Mixtec (N) and Melchor Ocampo Mixtec (MO), the basic word order is VSO, as shown in (1) and (2).[2]

(1) *ni-kuvaʔa* *ōktávíó* *ndyāyi* N
CMP-make[3] Octavio mole
'Octavio cooked the mole'.

(2) *tùvi* *ti* *ñuʔñu* *yùʔu* MO
sting.CMP CL.ANM bee PRN.1SG
'The bee stung me'.

[2] In our transcriptions, we use IPA except for the following, for which we use common conventions for Mixtec and more generally Native American languages: ch = [tʃ], dy = [ɟ], ñ = [ɲ], j = [h], r = [ɾ], x = [ʃ], ty = [c], and y = [ʒ] for Nieves Mixtec and y = [j] for Melchor Ocampo Mixtec.

The following abbreviations or conventions are used in the glosses: - morpheme boundary; = pronominal affix boundary; ACC accusative; ANM animal; CAUS causative; CL classifier; CMP completive; CON continuative; COP copula; DAT dative; F human feminine; HUM human; IMP imperative; IN inanimate; LIQ inanimate liquid; M human masculine; NEG negation; NOM nominative; PL plural; POT potential; POSS possessive pronoun; PRN independent (non-clitic) pronoun; SG singular; TEMP temporal subordinator (a non-wh version of *when* in English).

Like other Mixtec languages, Nieves Mixtec and Melchor Ocampo Mixtec exhibit a complex tonal system that demands an extended independent investigation. On the surface, Nieves Mixtec has three level tones, while Melchor Ocampo Mixtec has four level tones. In addition, both languages have an undetermined number of contour tones and tone sandhi. We know of no (tonal) analysis of Nieves Mixtec or Melchor Ocampo Mixtec. In this paper, the following conventions for indicating tone are employed. For Nieves Mixtec, we adopt the system Shields (1988) uses for Silacayoapan Mixtec, which is geographically close to Nieves Mixtec (see also North and Shields 1977). A high tone is written with an acute accent (*á*), mid tone with a macron (*ā*), and low tone is unmarked (*a*). For Melchor Ocampo Nieves, we follow the system used in Stark, Johnson, and Guzmán (2006) for Xochapa Mixtec, which is geographically close. The highest tone is marked with an acute accent (*á*), the second highest tone is unmarked (*a*), the next lower tone is indicated with a grave accent (*à*), while the lowest tone is indicated by an underline (*a̲*).

[3] Following the tradition in the Mixtec literature (e.g., Bradley and Hollenbach 1988*b*), we assume that Nieves Mixtec and Melchor Ocampo Mixtec mark aspect on verbs rather than tense, and we gloss verbal forms and related markers as completive (CMP), continuative (CON), or potential (POT). In both languages, some verbs make use of a preceding morphologically independent completive aspectual marker. In those cases, we gloss with CMP the aspectual marker only, while we do not include any aspectual specification in the glosses for the verb (as in 3 below). Aspectual distinctions can also be marked by differences in tones.

Like most verb-initial languages (Greenberg 1963), Nieves Mixtec and Melchor Ocampo Mixtec also allow for one constituent to occur in sentence-initial position, typically to indicate topichood or emphasis. Examples in (3)–(8) show different kinds of sentence-initial constituents in brackets: the subject in (3), (4), (7), and (8), the object in (5), and the locative in (6).

(3) [*ōktávíó*] *ni-kuvaʔa=**ra*** *ndyāyi* N
Octavio CMP-make=3SG.M[4] mole
'Octavio made the mole'.

(4) [*kīrī* *tyīna*] *sāsī=**rī*** *jíʔva* N
CL.ANM dog eat.CON=ANM chocolate
'The dog eats chocolate'.

(5) [*jwán*] *ni-ja-takueʔe* *yuū* *káʔnō* N
Juan CMP-CAUS-be_hurt rock big
'The large rock hurt Juan'.

(6) [*sata* *vēʔē*] *ni-kuvaʔa* *jūlīétá* *ndyāyi* N
back house CMP-make Julieta mole
'Julieta made mole behind the house'.

(7) [*ti* *ñuʔñu*] *tùvi=**ri*** *yùʔu* MO
CL.ANM bee sting.CMP=ANM PRN.1SG
'The bee stung me'.

(8) [(*ta*) *oktavio*] *keʔe=**ra*** *mole* MO
CL.3.M Octavio make.CMP=3SG.M mole
'Octavio made mole'.

The examples in (3)–(8) also illustrate two other properties held in common by both Nieves Mixtec and Melchor Ocampo Mixtec. First, both languages possess noun classifiers in prenominal position, as shown by the underlined forms in (4), (7), and (8). Noun classifiers vary according to features of the noun, like human male/human female/animal/inanimate/wood/liquid, etc. (de León 1988 and Aikhenvald 2000). The singular feature is conveyed only by human classifiers. In Melchor Ocampo Mixtec, classifiers can optionally occur with names as well (8), while this is not acceptable in Nieves Mixtec. In both languages, classifiers can be used to introduce relative clauses (see Appendix, published online only). Throughout the paper, we gloss classifiers as CL followed by their features. Though classifiers form a phonological unit

[4] Since gender and first/second-person distinctions mark human clitic pronouns only, we do not specify the feature HUM ("human") in the glosses whenever gender and/or first/second person is specified.

with the following word, we follow the convention in the Mixtec literature (see Bradley and Hollenbach 1988*b*) and write them as a separate word.

A second relevant property of both Mixtec languages is that when the subject precedes the verb, a clitic pronoun obligatorily appears postverbally, as shown in (3), (4), (7), and (8) with the clitic pronoun in boldface (see Macaulay 2005). The clitic pronoun varies in form according to the class of the preverbal subject. For instance, in Nieves Mixtec, the clitic pronoun is *=ra* with a singular human male preverbal subject (3), while it is *=ri* with an animal subject (4). The subject clitic pronouns are in complementary distribution with postverbal subjects. When the subject is postverbal, the clitic pronouns are impossible, as shown in (9) and (10).

(9) **ni-kuvaʔa=**ra** ōktávíó ndyāyi* (cf. 3) N
CMP-make=3SG.M Octavio mole
'Octavio made the mole'.

(10) **tùvi=**ri** ti ñuʔñu yùʔu* (cf. 7) MO
sting.CMP=3SG CL.ANM bee PRN.1SG
'The bee stung me'.

Clitic pronouns can also occur without an overt full NP subject, as shown in (11) and (12).

(11) *ni-kuvaʔa=**ra** ndyāyi* N
CMP-make=3SG.M mole
'He made the mole'.

(12) *keʔe=**ra** mole* MO
make.CMP=3SG.M mole
'He made mole'.

Clitic pronouns convey similar feature distinctions as noun classifiers, but the two classes are not morphologically identical. For instance, the animal noun classifier in Nieves Mixtec is *kīrī*, while the animal verb clitic is *=ri* (cf. 4). Similarly, the animal noun classifier is *ti* in Melchor Ocampo Mixtec, while the animal verb clitic is *=ri* (cf. 7). We gloss verb clitics just with their features. Therefore, a morpheme glossed just as ANM can only be a verb clitic, while a morpheme glossed as CL.ANM can only be a classifier.

2.2. Interrogative wh-clauses. Interrogative wh-clauses in Nieves Mixtec and Melchor Ocampo Mixtec are formed by placing the wh-expression to the left edge of the clause—so that it precedes all verbal material—and by leaving a gap in the position where the corresponding non-wh expression would appear. For instance, the wh-word *yō* 'who' questioning the subject in (13) occurs in sentence-initial position, but no overt material occurs in the postverbal subject position.

TABLE 1
WH-EXPRESSIONS IN NIEVES MIXTEC AND MELCHOR OCAMPO MIXTEC

	Nieves Mixtec	Melchor Ocampo Mixtec
Who	*yō*	*ìkúnà* (HUM) *ìkúña* (SG.F) *ìkúra* (SG.M) *ndakúna* (HUM) *naa* (HUM)
What	*ndyákūa* *ndyákīa* *ndyáñakūa* *ndyáñakīa* *ndyáña*	*ñaà* *ñàʔá* *ndàkúwá* *ikúwá*
What/which + N	*ndyá*	*ndá*
Where	*ndyáa*[1]	*ndá*(*chí*) *ndáchíkúwá* *ñuù*
When	*ndyánāmā*	*amakúwa*
How	*ndyīxī*	*achí* *àchiká* *ndákúwá*
Why	*navaʔa*	*achí* *(àchiká)*[2] *àchìkúwá*
How much/how many	*nājāā*	*nasá* *nasákúyá*

[1] The wh-word *ndyáa* 'where' differs from the wh-word *ndyaá* 'what' in vowel length but also in tone, with *ndyáa* carrying falling tone and *ndyá* carrying high tone.

[2] In certain contexts, *àchiká* seems to be interpretable as 'why', in addition to its usual meaning of 'how'. This pattern resembles varieties of English like African American Vernacular English, as shown in:

(*i*) ***How*** *are you going to treat your mother like that*?

'**Why** would you treat your mother like that?'

We leave the determination of the factors licensing such restricted use of *àchiká* for future research.

(13) ***yō*** *ni-kuvaʔa* *ndyāyi* N
who CMP-make mole
'Who made the mole?'

Notice that the fronting of the wh-subject in (13) does not trigger the occurrence of a subject clitic suffix on the verb, unlike what we saw for fronted non-wh subjects in the previous section. The presence of a subject clitic would actually make the sentence unacceptable.

Table 1 gives the inventory of wh-expressions in both languages. Examples follow.

The interrogative wh-clauses in (14)–(27) exemplify the use of all the wh-words that are relevant for our discussion of FRs. Examples (14)–(20)

are from Nieves Mixtec (an example of an interrogative introduced by 'who' was given in 13 above), while (21)–(27) are from Melchor Ocampo Mixtec.

(14) ***ndyáña*** *ni-kuvaʔa* *jūlīétá* N
what CMP-cook Julieta
'What did Julieta cook?'

(15) ***ndyánāmā*** *ni-kuvaʔa* *jūlīétá* *ndyāyi* N
when CMP-make Julieta mole
'When did Julieta make the mole?'

(16) ***ndyáa*** *ni-kuvaʔa* *jūlīétá* *ndyāyi* N
where CMP-make Julieta mole
'Where did Julieta make the mole?'

(17) ***ndyīxī*** *ni-kuvaʔa* *jūlīétá* *ndyāyi* N
how CMP-make Julieta mole
'How did Julieta make the mole?'

(18) ***nājāā*** *ndyāyi* *ni-kuvaʔa* *jūlīétá* N
how_much mole CMP-make Julieta
'How much mole did Julieta make?'

(19) ***nājāā*** *xīta* *ni-kuvaʔa* *jūlīétá* N
how_many tortilla CMP-make Julieta
'How many tortillas did Julieta make?'

(20) ***navaʔa*** *ni-kuvaʔa* *jūlīétá* *ndyāyi* N
why CMP-make Julieta mole
'Why did Julieta make the mole?'

(21) ***i̱kúná*** *xi̱ni̱* *yo̱ʔo̱* MO
who see.CMP PRN.2SG
'Who saw you?'

(22) ***ñaʔa*** *ke̱ʔe̱* *ra̱* *jwā́* MO
what make.CMP CL.M Juan
'What did Juan make?'

(23) ***amakúwa*** *xi̱ni̱=ű́* MO
when see.CMP=2SG
'When did you see him?'

(24) ***ndáchi*** *kaʔk=ű́* MO
where be_born.CMP=2SG
'Where were you born?'

(25) ***àchiká*** *keʔ=ű́* *tìyaʔá* MO
how make.CMP=2SG salsa
'How did you make the salsa?'

(26) ***nasá*** *chòcòlatè/libru* *sata=ű́* MO
how_much/how_many chocolate/book buy.CMP=2SG
'How much chocolate/How many books did you buy?'

(27) ***àchìkúwá*** *ndi-xa=ũ* *i̲tà* MO
why CMP-go=2SG river
'Why did you go to the river?'

Wh-movement is obligatory and wh- in situ is ungrammatical in both languages. In (28), the wh-subject *yō* 'who' appears in situ with no constituent in the preverbal position. In (29), the wh-object *ndyáña* 'what' is in situ, while the subject *jwán* 'Juan' has been fronted. Neither wh-clause is acceptable in Nieves Mixtec. The same pattern holds in Melchor Ocampo Mixtec, as shown in (30) and (31).

(28) **ni-kānī* ***yō*** *jwán* N
CMP-hit who Juan
('Who hit Juan?')

(29) **jwán* *ni-kuvaʔa=ra* ***ndyáña*** N
Juan CMP-make=3SG.M what
('What did Juan make?')

(30) **jwā́* *kāni* *ìkúnà* MO
Juan hit.CMP who
('Who hit Juan?')

(31) **ke̲'e̲* *ra̲* *jwā́* ***ñaá*** MO
make.CMP CL.3.M Juan what
('What did Juan make?')

Most of the wh-expressions appear to be morphologically complex. For example, the Melchor Ocampo Mixtec forms *ikuña*, *ikura*, and *ikuna* seem to be composed of what looks like a form of the copula *ku* and the human pronominal verbal suffixes *=ña*, *=na*, or *=ra*. The initial *i-* also seems to occur in the form *ikuwa* 'what'. That many of the wh-expressions are internally complex can also be seen by looking at *ndyá* (Nieves Mixtec) and *nda* (Melchor Ocampo Mixtec), which occur in many of the wh-expressions in table 1. The forms *ndyá* and *nda* also occur with ordinary nouns and seem to correspond to the English (ISO code: eng) *which* + N, as shown in (32) and (33).

(32) ***ndyá*** ***tyútyú*** *ni-kāʔvī* *jwán* N
which paper CMP-read Juan
'Which book did Juan read?'

(33) ***ndá*** ***libru*** *sàta* *ña* *maria* MO
which book buy.CMP CL.F Maria
'Which book did Maria buy?'

At this point, the exact segmentation of many of the forms in table 1 is unclear. Thus, we leave a fine-grained morphological analysis of the internal structure of the wh-expressions for future research. What is important for our purposes is that a form like *ikuna* corresponds to 'who'. That is, if a speaker is asked how to say 'who', *ikuna* is the form given.

Embedded interrogative wh-clauses are identical to matrix ones, including obligatory fronting of the wh-phrase and lack of subject clitic pronoun on the verb with wh-subject. (34) shows a matrix interrogative wh-clause in Nieves Mixtec, while (35) shows the corresponding embedded one. The same pattern is shown in (36) and (37) for Melchor Ocampo Mixtec.

(34) ***yō*** *ni-kuvaʔa* *ndyāyi* N
who CMP-make mole
'Who made the mole?'

(35) *sēnóbíá* *kúni=a* *kūndāʔīñ=a* [***yō***
Cenobia want.CON=3SG.F understand.POT=3SG.F who
ni-kuvaʔa *ndyāyi*] N
CMP-make mole
'Cenobia wants to know who made the mole'.

(36) ***ndachí*** *ndí-xà=ũ* MO
where CMP-go=2SG
'Where did you go?'

(37) *koó xìn=ì* [***ndachí*** *ndí-xà=ũ*] MO
NEG know.CON=1SG where CMP-go=2SG
'I don't know where you went'.

Neither Nieves Mixtec nor Melchor Ocampo Mixtec allows for interrogative wh-clauses with more than one wh-word (see online Appendix for relevant data).

Unlike languages like Japanese (ISO code: jpn) or Mandarin (ISO code: cmn), wh-words in Nieves Mixtec or Melchor Ocampo Mixtec cannot occur in a matrix declarative sentence to form indefinite or universally quantified expressions. Neither (38) in Nieves Mixtec nor (39) in Melchor Ocampo

Mixtec can ever mean that Juan made/cooked something or everything, since these are just unacceptable sentences.[5]

(38) *jwán ni-kuvaʔa=ra **ndyáña** N
Juan CMP-cook=3SG.M what

(39) *ra jwā́ sikwa=ra **ikúwá /ndàkúwá/ñàʔá** MO
CL.3.M Juan prepare.CMP=3SG.M what

2.3. Headed relative clauses. Both Nieves Mixtec and Melchor Ocampo Mixtec have headed relative clauses, i.e., relative clauses that are always introduced by an external constituent behaving like their "head." Headed relative clauses share important features with interrogative wh-clauses in both languages. Similar to the fronting of the wh-phrase in interrogative wh-clauses, the head of a relative clause occurs on the far left edge of the entire relative clause, as expected of verb-initial languages. In addition, the head noun is not resumed by any clitic on the verb or full pronoun in argument position inside of the relative clause. That is, there is a gap strategy in both interrogative wh-clauses and relative clauses.

Both Nieves Mixtec and Melchor Ocampo Mixtec make use of three slightly different strategies to form relative clauses. All three share the properties of having a fronted head and a gap. They differ in what immediately follows the head: (*i*) just the predicate of the relative clause (with possible aspect markers), (*ii*) a classifier that precedes the relative predicate, or (*iii*) a wh-word (or wh-phrase) that precedes the relative predicate. For reasons of space, we do not go into a detailed description of each type of headed relative clause; instead, we focus on relativization strategy (*iii*), which is more directly relevant for free relative clauses, since both constructions make use of wh-words. Further discussion and examples of the other two relativization strategies are provided in the online Appendix.

Both Nieves Mixtec and Melchor Ocampo Mixtec can form headed relative clauses by having a wh-expression occur right after the head of the relative clause. Only a small subset of wh-words that introduce interrogative clauses can introduce headed relative clauses as well, as shown in table 2. Relevant examples from both languages follow.

Consider examples from Nieves Mixtec first. (40) shows that the wh-word for 'who' can introduce a headed relative clause.

(40) *jwán kūtóó=ra ñáʔa [**yō** kūtóó jēráldó́] N
Juan like.CON=3SG.M woman who like.CON Geraldo
'Juan likes the woman who Geraldo likes'.

[5] Our consultants find the strings in (38) and (39) acceptable only if understood and uttered as two separate clauses like the English *John cooked* (*something*). *What?*

TABLE 2
DISTRIBUTION OF WH-WORDS IN HEADED RELATIVE CLAUSES IN NIEVES MIXTEC AND MELCHOR OCAMPO MIXTEC

	Who	What	Where	When	How	Why	What + N/ Which + N	How Much/ How Many
N	√	*	√/*	*	√	*	n.a.	n.a.
MO	*	*	√	*	?	?	n.a.	n.a.

Note: √ = acceptable; * = not acceptable; ? = unclear; n.a. = data not available.

(41) shows that the wh-words for 'how' as well can introduce a headed relative clause.

(41) *máríá* *kūtóó=a* *nakéʔā* [***ndyīxī*** *sātāsāʔa=ra*] N
Maria like.CON=3SG.F way how dance.CON=3SG.M
'Maria likes how he dances'.

The wh-word for 'where' exhibits a mixed behavior: it can introduce headed relative clauses if the preceding nominal head is more naturally interpreted as an indefinite (42), while the resulting sentence is degraded if the nominal head is more naturally interpreted as a definite (43).

(42) *jwán* *íí* *vēʔē* [***ndyáa*** *kúju=ra*] N
Juan exist.CON house where sleep.CON=3SG.M
'Juan has a house where he sleeps'.

(43) **jwán* *kūtóó=ra* *vēʔē* [***ndyáa*** *íí* *máríá*] N
Juan like.CON=3SG.M house where exist.CON Maria
('Juan likes the house where Maria lives'.)

The wh-words for 'what', 'when', and 'why' cannot introduce headed relative clauses at all:

(44) **jwán* *kūtóó=ra* *tyīna* [***ndyáña*** *kūtóó* *jēráldó*] N
Juan like.CON=3SG.M dog what like.CON Geraldo
('Juan likes the dog which Geraldo likes'.)

(45) **jwán* *íí* *tyāni* [***ndyánāmā*** *kú* *kāʾvī=rā*
Juan exist.CON time when can read.POT=3SG.M
ī̄ī̄ *tyútyú*] N
one book
('Juan has time when he can read a book'.)

(46) *jwán ni-saʔa=ra kōsíná sáʔa [**navaʔa**
Juan CMP-come=3SG.M kitchen reason why
kūsāʔā māríá kōsíná] N
come.POT maria kitchen
('Juan came to the kitchen for the same reason why Maria will come to the kitchen'.)

Now consider examples in Melchor Ocampo. The wh-words for 'who' and 'what' cannot introduce headed relative clauses, unlike the classifiers (47 and 48).

(47) *jwā́ xi̲ni̲=rà ña ñà'a [***ìkúña/ñà**
Juan see.CMP=3SG.M CL.3.F woman who.SG.F/CL.3SG.F
xinu] MO
run.CMP
'Juan saw the woman who ran'.

(48) *le̲ko̲* [***ndá /ti** *yaxi chòkòlatè*] MO
rabbit what/CL.ANM eat.CON chocolate
'the rabbit that eats chocolate'

The wh-words for 'where' can introduce headed relative clauses (49), while the wh-word for 'when' cannot (a temporal marker is needed instead) (50).

(49) *xìn=ì vèʔè* [**ndachí** *íí yo̲=ũ*] MO
see.CMP=1S house where exist.CON live.CMP =2SG
'I saw the house where you live'.

(50) *kivi* [***amakúwa**/*tá xin=i yo̲ʔo*] MO
day when/TEMP see.CMP=1SG PRN.2SG
'the day when I saw you'

Finally, there are several wh-words that can be used for either 'how' or 'why' or both in Melchor Ocampo Mixtec, but only one of them (*àchiká*) can introduce a headed relative clause (51).

(51) *kùtoo=i kù'va* [***àchiká/*achí/*àchìkúwá/*ndakúwá**
like.CON=1SG way/reason how/why
sìkwa̲ʔ=ũ tìyaʔá] MO
prepare.CMP=2SG salsa
'I like the way how you made the salsa' or 'I like the reason why you made salsa'.

In conclusion, both Nieves Mixtec and Melchor Ocampo Mixtec have headed relative clauses, i.e., relative clauses that are introduced by an external

head. They can be introduced by a wh-word as a relative marker, occurring right after the head. No wh-word that looks morphologically complex can introduce headed relative clauses, and only some morphological simple wh-words can. As shown in the next sections, free relative clauses exhibit a different pattern as far as the wh-words that can introduce them are concerned.

3. Introducing free relative clauses. The constructions we are focusing on in the remainder of the paper are called FREE RELATIVE CLAUSES (FRs). A FR is an embedded non-interrogative wh-clause like *what Adam cooked* in *Luca tasted what Adam cooked*. In this section, we first define FRs in a way that provides a clear test for identifying them within a language and across languages (**3.1**), then we introduce the three kinds of FRs that have been attested cross-linguistically (**3.2**). In **4–6**, we apply this definition to show that both Nieves Mixtec and Melchor Ocampo Mixtec have all three kinds of FRs.

3.1. A definition of free relative clauses. In our investigation of FRs in Mixtec, we adopt the definition of FRs in (52) (adapted from Caponigro 2003; 2004).

(52) DEFINITION OF FRS. FRs are all and only those strings that satisfy the following three properties:

LEXICAL PROPERTY: FRs contain a **wh-word**.

SYNTACTIC PROPERTY: FRs are **embedded clauses** with a **gap** in argument or adjunct position.

SEMANTIC PROPERTY: FRs can **always** be replaced with truth-conditionally equivalent NPs or Preposition Phrases (PPs) (or oblique or adverbial constituents).

According to this definition, the string we mentioned above—*what Adam cooked* in *Luca tasted what Adam cooked*—is a FR because it contains the wh-word *what* (LEXICAL PROPERTY); it is an embedded clause with an object gap (*cooked* lacks its object) (SYNTACTIC PROPERTY); and it can be replaced and paraphrased with the definite NP *the thing*(*s*) *that Adam cooked* (SEMANTIC PROPERTY).

FRs are attested cross-linguistically. They are found in many Indo-European languages (Germanic, Romance, Slavic, Albanian [ISO code: sqi], Modern Greek [ISO code: ell]), in Finno-Ugric languages (at least in Estonian [ISO code: est], Finnish [ISO code: fin], and Hungarian [ISO code: hun]), in Semitic languages (at least in Modern Hebrew [ISO code: heb] and Moroccan Arabic [ISO: ary]), in Mayan languages (at least in Yucatec Maya [ISO code: yua], Kaqchikel [ISO code: cak], and K?ichee? [ISO code: quc]), and in Haida

(ISO code: hax), an isolate Native American language (or a member of the Na-Dene family according to some).[6]

3.2. Three kinds of free relative clauses. Three kinds of FRs have been discussed in the literature and are attested cross-linguistically. We briefly discuss each of them below since they are relevant for our investigation of FRs in Mixtec in **4–6**.

3.2.1. Definite free relatives. The most common FRs are those that can be replaced or paraphrased with a definite NP or a definite PP (or oblique). We call these free relatives DEFINITE FRs. Examples of definite FRs in English introduced by all five wh-words that can introduce them are given in (53)–(57) below. In each pair, (*a*) provides an example with a FR, while (*b*) provides the corresponding example with a definite NP or a PP replacing and paraphrasing the FR.

(53*a*) *Luca tasted* [$_{FR}$ ***what*** *Adam cooked*].
(53*b*) *Luca tasted* [$_{NP}$ {***the food/the thing*(*s*)**}] *Adam cooked*].

(54*a*) *I'll marry* [$_{FR}$ ***who*** *you choose*].
(54*b*) *I'll marry* [$_{NP}$ ***the person*** *you choose*].

(55*a*) *You can't smoke* [$_{FR}$ ***where*** *the kids are playing*].
(55*b*) *You can't smoke* [$_{PP}$ ***in the place*(*s*)** *where the kids are playing*].

(56*a*) *I left* [$_{FR}$ ***when*** *Daniel arrived*].
(56*b*) *I left* [$_{PP}$ ***at the same time*** *that Daniel arrived*].

(57*a*) *WE did it* [$_{FR}$ ***how*** *YOU did it*].
(57*b*) *WE did it* [$_{PP}$ ***in the way*** *YOU did it*].

Notice that FRs introduced by *where*, *when*, and *how* can occur where a PP would usually occur, as shown in (55)–(57) above, but they can also occur where an NP would usually occur, as shown in (58)–(60) below.

(58*a*) *I don't like* [$_{FR}$ ***where*** *the kids are playing*].
(58*b*) *I don't like* [$_{NP}$ ***the place*(*s*)** *where the kids are playing*].

(59*a*) *They were happy from* [$_{FR}$ ***when*** *Daniel arrived*] *to* [$_{FR}$ ***when*** *he left*].
(59*b*) *They were happy from* [$_{NP}$ ***the moment*** *Daniel arrived*] *to* [$_{NP}$ ***the moment*** *he left*].

(60*a*) *I hate* [$_{FR}$ ***how*** *you did it*].
(60*b*) *I hate* [$_{NP}$ ***the way*** *you did it*].

3.2.2. Existential free relatives. Some languages allow FRs to occur as the complement of existential predicates. Germanic languages usually

[6] See Caponigro (2003; 2004) for Indo-European, Finno-Ugric, and Semitic languages; Tonhauser (2003), Gutiérrez-Bravo and Monforte (2009), and Gutiérrez-Bravo (2010) for Yucatec Maya; Torrence (2010) for Kaqchikel; Henderson (2012) for K?ichee?; and Enrico (2003) for Haida. The syntactic nature of FRs (their categorical status and the syntactic position of their wh-word) is an open issue. See van Riemsdijk (2005) for a thorough survey.

disallow this option (but see Yiddish [ISO code: yid] for an exception [Caponigro 2003]), while the other Indo-European languages and Semitic languages mentioned above do allow for these FRs that we call EXISTENTIAL FRs.[7] Examples of existential FRs from Hebrew are given in (61) and (62).[8] The two existential FRs are introduced by a different wh-word and their meaning is equivalent to the meaning of a complex indefinite NP, as highlighted by the English translation.

(61) *le-mazal-i* *yesh* *li* [$_{FR}$ *im* ***mi*** *le-daber*]
to-luck-1SG.POSS have 1SG.DAT with **who** to-talk
kshe=ani *acuva*
when=1SG.NOM sad
'Fortunately, I have somebody to talk to when I am sad'.

(62) *al* *tid?ag* *yesh* *lanu* [$_{FR}$ ***ma*** *li-kro*]
NEG worry.2SG.M have 1PL.DAT **what** to-read
'Don't worry! We have something to read'.

3.2.3. *-ever* free relatives. Finally, most languages allow for FRs whose wh-words are morphologically or syntactically modified by what in English looks like the suffix *-ever*. The morphosyntactic marking is associated with a change in the syntactic and the semantic behavior of the FRs, although the correct description and account for such a change are still debated. Examples of *-ever* FRs from English are given in (63)–(67). The (*a*) example in each pair provides the *-ever* FR, while the (*b*) example gives a close paraphrase by means of an NP introduced by the free choice element *any*.

(63*a*) *I'll marry* [$_{FR}$ ***whoever*** *you choose*].
(63*b*) *I'll marry* [$_{NP}$ ***any person*** *you choose*].

(64*a*) *Luca tastes* [$_{FR}$ ***whatever*** *Adam cooks*].
(64*b*) *Luca tastes* [$_{NP}$ {***any food/anything***} *Adam cooks*].

(65*a*) *You can't smoke* [$_{FR}$ ***wherever*** *the kids are playing*].
(65*b*) *You can't smoke* [$_{PP}$ ***in any place*** *where the kids are playing*].

(66*a*) *I leave* [$_{FR}$ ***whenever*** *Flavio shows up*].
(66*b*) *I leave* [$_{PP}$ ***anytime*** *Flavio shows up*].

(67*a*) *We'll do it* [$_{FR}$ ***however*** *you do it*].
(67*b*) *We'll do it* [$_{PP}$ ***anyway*** *you do it*].

[7] See Šimík (2011) for a comprehensive survey of existential free relatives cross-linguistically and a detailed proposal for their syntactic and semantic analysis.

[8] Thanks to Daphna Heller, Orr Ravitz, and Yael Sharvit for the data. The Hebrew data are transcribed according to the transliteration from Hebrew that our consultants provided to us and do not follow the conventions we adopted for transcribing Mixtec (see Caponigro 2003 for further Hebrew data and cross-linguistic data about existential FRs).

In what follows, we show that both Mixtec languages described in this study have all three kinds of FRs that are found across languages.

4. Definite free relative clauses in Nieves Mixtec and Melchor Ocampo Mixtec. Both Nieves Mixtec and Melchor Ocampo Mixtec have definite FRs, that is, FRs that are interpreted as definite descriptions. In what follows, we give examples of FRs introduced by each wh-expression in both languages.

4.1. Definite FRs introduced by 'who'. Definite FRs can be introduced by the wh-word for 'who' in both languages:

(68) [***yō*** *ni-kānī* *jēráldó*] *ni-kānī* *jwán* N
who CMP-hit Geraldo CMP-hit Juan
'The one(s) who hit Geraldo hit Juan too'.

(69) [***yō*** *ni-jā-tākwēʔē* *yuū*] *kō* *ni-síʔi* N
who CMP-CAUS-be_hurt rock NEG CMP-die
'The one(s) who the rock hurt did not die'.

(70) *kani* [***ìkúnà/naa/ìkúrà/ìkúñà/ndàkúná*** *xìnì=ũ*] MO
hit.POT=1SG who see.CMP=2SG
'I will hit the one(s) who you saw'.

(71) *kani* [***ìkúnà/naa/ìkúrà/ìkúñà/ndàkúná*** *sata*
hit.POT=1SG who buy.CMP
libru] MO
book
'I will hit the one(s) who bought the book'.

4.2. Definite FRs introduced by 'what'. Definite FRs can be introduced by the wh-word for 'what' in both languages:

(72) *jwán* *ni-sáʔnō=rā* [***ndyáñakūa*** *ni-jā-tākwēʔē*
Juan CMP-break=3SG.M what CMP-CAUS-be_hurt
jēráldó] N
Geraldo
'Juan broke what hurt Geraldo'.

(73) *jwán* *kūtóó=ra* [***ndyákūa*** *ni-kuvaʔa* *jūlīétá*] N
Juan like.CON=3SG.M what CMP-make Julieta
'Juan likes what Julieta made'.

(74) *kúx=í* [***ndàkúwá*** *xi̲ni̲=ũ*] MO
eat.POT=1SG what see.CMP=2SG
'I will eat what you saw'.

4.3. Definite FRs introduced by 'what/which' + N. Definite FRs can be introduced by the equivalent of the complex wh-expression *what/which* + N in Melchor Ocampo Mixtec (76 and 77) but not in Nieves Mixtec (75). The behavior of Nieves Mixtec is the most common across languages: complex wh-expressions usually do not introduce FRs (Caponigro 2003).

(75) **jwán* *kúni=ra* [***ndyá*** ***tyīna*** *sāsī* *jíʔva*] N
Juan want.CON=3SG.M what dog eats.CON chocolate
('Juan wants the dog that eats chocolate'.)

(76) *xèko=i* [***ndá*** ***burro*** *kúú* *ri* *xìnu*] MO
sell.POT=1SG what donkey COP PRN.ANM run.CMP
'I will sell the donkeys that ran'.

(77) *kux=i* [***ndá*** ***ñaʔá*** *kuwa* *xini=ű́*] MO
eat.POT=1SG what thing COP see.CMP=2SG
'I will eat what you saw'.

4.4. Definite FRs introduced by 'where'. Definite FRs introduced by the the wh-word for 'where', occurring as the complement of a predicate selecting for an NP, are unacceptable in Nieves Mixtec (78), while they are fine in Melchor Ocampo Mixtec (79).

(78) **jwán* *kūtóó=ra* [***ndyáa*** *ni-kāʔvī=ra* *tyútyú*] N
Juan like.CON=3SG.M where CMP-read=3SG.M book
('Juan likes where he read the book'.)

(79) *kùtoo=i* [***ndáchíkúwá*** *kà'vi* *jwā́* *libru*] MO
like.CMP=1SG where read.CMP Juan book
'I liked where Juan read the book'.

Definite FRs introduced by the wh-word for 'where', occurring where a PP or other locative form would usually occur, are acceptable in both languages:

(80) *gābrīélá* *ni-ndīkwā=ā* *xīta* [***ndyáa*** *ni-kuvaʔa* *jūlīétá*
Gabriela CMP-make=3SG.F tortilla where CMP-cook Julieta
ndyāyi] N
mole
'Gabriela made tortillas where Julieta made mole'.

(81) *kusũ=i* [***ndachíkuwa*** *ndi-kixi* *yo̲ʔo*] MO
sleep.POT=1SG where CMP-sleep 2SG
'I will sleep where you slept'.

4.5. Definite FRs introduced by 'when'. Definite FRs introduced by the wh-word for 'when', occurring as the complement of a predicate selecting for an NP, are unacceptable in both languages:

(82) *vīktóor kūtóó=ra [**ndyánāmā** kānī jwán
Victor like.CON=3SG.M when hit.CON Juan
jēráldó] N
Geraldo
('Victor likes when Juan hits Geraldo'.)

(83) *kùtoo=i [**amakúwa** kaṇi jwā́ dàvìd] MO
like.CMP=1SG when hit.CMP Juan David
('I liked when Juan hit David'.)

Definite FRs introduced by the wh-word for 'when', occurring where a PP or other temporal form would normally occur, are acceptable in Nieves Mixtec:

(84) kāríná ni-kuvaʔa ī̄ī̄ pastéel [**ndyánāmā** ni-kuvaʔa
Carina CMP-cook one cake when CMP-cook
jūlīétá ndyāyi] N
Julieta mole
'Carina made a cake when Julieta made the mole'.

On the other hand, in Melchor Ocampo Mixtec, the wh-word that introduces interrogative *when*-clauses (85) cannot introduce FRs (86). The non-wh temporal subordinator *ta* must be used instead (87). *ta* cannot introduce interrogative *when*-clauses, however (88).

(85) **amakúwa** sata=ű́ libru=m MO
when buy.CMP=2SG book= POSS.2SG
'When did you buy the book?'

(86) *saṭe=i libru=i [**amakúwa** sata=ũ
buy.CMP=1SG book=POSS.1SG when buy.CMP=2SG
librú=m] MO
book=POSS.2SG
('I bought my book when you bought your book'.)

(87) saṭe=i libru=i [**tá** sata=ũ
buy.CMP=1SG book= POSS.1SG TEMP buy.CMP=2SG
librú=m] MO
book=POSS.2SG
'I bought my book when you bought your book'.

(88) ***tá** sata=ű́ librú=m MO
TEMP buy=CMP.2SG book= POSS.2SG
('When did you buy your book?')

The very same pattern (in which the wh-word introducing temporal interrogative clauses cannot be used to form a FR and a different non-wh word must be used to form a non-interrogative temporal clause) is attested in other languages with FRs. For instance, in German (ISO code: deu), the wh-word *wann* 'when' can introduce interrogative temporal clauses, while the non-wh temporal subordinator *als* 'when' cannot (89). The reverse pattern holds for non-interrogative temporal clauses (90).[9]

(89) *Ich* *habe* *dich* *gefragt* [***wann/*als***
PRN.1SG have PRN.2SG.ACC asked when/TEMP

Maria *angekommen* *ist*]
Maria arrived is

'I asked you when Maria arrived'.

(90) *Ich* *bin* *gegangen* [***wann/als*** *Maria* *angekommen*
PRN.1SG am left when/TEMP Maria arrived

ist]
is

'I left when Maria arrived'.

4.6. Definite FRs introduced by 'how'. Definite FRs introduced by the wh-word for 'how' are attested in Nieves Mixtec and can occur as the complement of a predicate selecting for an NP (91) or in a position where a PP or other manner expressions would usually occur (92).

(91) *jwán* *kundají=ra* [***ndyīxī*** *ni-kuvaʔa* *jēráldó*
Juan hate.CON=3SG.M how CMP-cook Geraldo

ndyāyi] N
mole

'Juan hates how Geraldo made the mole'.

(92) *éríka* *kúni=a* *kuvaʔ=a* *ndyāyi* [***ndyīxī***
Erica want.CON=3SG.F cook.POT=3SG.F mole how

ni-kuvaʔa *jūlīétá* *ndyaȳi*] N
CMP-cook Julieta mole

'Erica wants to make mole how Julieta made mole'.

In Melchor Ocampo Mixtec, the wh-word *àchiká* is interpreted as 'how' or 'why' when it occurs in FRs. Thus, the resulting FR is ambiguous, whether it behaves like an NP (93) or a PP (94).

[9] Thanks to Julia Berger and Daniel Büring for the data and the judgments. The German data are transcribed in the standard German orthography and do not follow the conventions we adopted for transcribing Mixtec.

(93) *koó* *ni-kutoo=i* [***àchiká*** *sikwa=ũ* *tìyaʔá*] MO
NEG CMP-like=1SG how prepare.CMP=2SG salsa

'I didn't like how you prepared the salsa' or 'I didn't like the reason why you prepared the salsa'.

(94) *jwā́* *kuni=ra* *ke̲ʔe̲=ra* *tìyaʔá* [***àchiká***
Juan want.CON=3SG.M make.CON=3SG.M salsa how

keʔ=ű́ *tìyaʔá*] MO
make.CMP=2SG salsa

'Juan wants to make salsa how you made salsa' or 'Juan wants to make salsa for the same reason why you made that salsa'.

Interestingly, *àchiká* canonically means just 'how' in constituent interrogative clauses (95) (but see n. 2 in table 1).

(95) ***àchiká*** *keʔ=ũ* *tìyaʔá* MO
how make.CMP=2SG salsa

'How did you make the salsa?' (CANNOT MEAN: 'Why did you make the salsa?')

4.7. Definite FRs introduced by 'why'. The wh-word that is used as 'why' in constituent interrogative clauses cannot introduce a FR in either language. This pattern holds cross-linguistically (Caponigro 2003). In Nieves Mixtec, the wh-word for 'why' cannot introduce a FR behaving like an NP (96) or one behaving like a PP (97).

(96) **jwán* *kūtóó=ra* [***navaʔa*** *ni-kuvaʔa* *jūlīétá*
Juan like.CON=3SG.M why CMP-make Julieta

ndyāyi] N
mole

('Juan likes the reason why Julieta made mole'.)

(97) **ōktávió* *ni-saʔa=ra* *kōsíná* [***navaʔa*** *ni-saʔa*
Octavio CMP-arrive=3SG.M kitchen why CMP-arrive

jūlíétá *kōsíná*] N
Julieta kitchen

('Octavio came to the kitchen for the same reason why Julieta did'.)[10]

In Melchor Ocampo Mixtec, the wh-word *àchìkúwá* in a constituent interrogative can only mean 'why' (98), unlike the wh-word *àchiká* (discussed in **4.6)** that can mean either 'why' or 'how'.

[10] This string is acceptable if analyzed as two sentences meaning 'Octavio came to the kitchen. Why did Julieta come to the kitchen?'

(98) ***àchìkúwá*** *keʔ=ű́* *tìyaʔá* MO
why make.CMP=2SG salsa
'Why did you make the salsa?'

Unlike *àchiká*, *àchìkúwá* can never introduce a FR (99).

(99) **ndì-xa̲=i̲* *i̲tà* [***àchìkúwá*** *ndì-xa̲* *yo̲ʔo̲*] MO
CMP-go=1SG river why CMP-go PRN.2SG
('I went to the river for the same reason why you went'.)

4.8. Definite FRs introduced by 'how much/how many'. The complex wh-expression equivalent to *how much/many* + N can introduce definite FRs in both languages:

(100) *jwán* *íí* [***nājāā*** ***ndyāyi*** *íí* *nūū̄*
Juan exist.CON how_much mole exist.CON to
māríá] N
Maria
'Juan has the same amount of mole as Maria'.

(101) *jwán* *kúni=ra* [***nājāā*** ***tákó*** *íí* *nũū̄*
Juan want.CON=3SG.M how_many taco exist.CON to
māríá] N
Maria
'Juan wants as many tacos as Maria has'.

(102) *kò'ò=i* [***nasá*** ***lèchè*** *sa̲ta̲=ũ*] MO
drink.POT=1SG how_much milk buy.CMP=2SG
'I will drink as much milk as you bought'.

(103) *kaʔv=i* [***nasá*** ***libru*** *sata=ű́*] MO
read.POT=1SG how_many book buy.CMP=2SG
'I will read as many books as you bought'.

4.9. Summary about definite FRs. Our findings about the wh-words that can introduce definite FRs in Nieves Mixtec and Melchor Ocampo Mixtec are summarized in table 3.

5. Existential free relative clauses in Nieves Mixtec and Melchor Ocampo Mixtec. Both Nieves Mixtec and Melchor Ocampo Mixtec have a construction that is close in meaning to the existential constructions *there is/are* + NP (e.g., *There's something to read*) or *have* + NP (e.g., *Jim has a place to live*) in English. In both Mixtec languages, the existential construction is built around a predicate that roughly means 'exist'. (104) shows an example of an existential construction in Nieves Mixtec that resembles the

TABLE 3
DISTRIBUTION OF WH-WORDS IN DEFINITE FRS
IN NIEVES MIXTEC AND MELCHOR OCAMPO MIXTEC

	Who	What	Where NP/PP	When NP/PP	How NP/PP	Why NP/PP	What + N/ Which + N	How Much/ How Many
N	√	√	*/√	*/√	√/√	*/*	*	√
MO	√	√	√/√	*/*	√/√	?/?	√	√

Note: √ = acceptable; * = not acceptable; ? = unclear.

there is/are + NP construction in English. The existential predicate *tí* 'exist' is followed by what looks like a relative clause introduced by just the inanimate classifier *ña* without an overt head (we bracket the whole relative clause in this example and the following). The same pattern is observed in Melchor Ocampo Mixtec (105).

(104) *tí* [*ña* *ku* *kusiáʔa=na*] N
exist.CON CL.IN can eat.POT=3PL.HUM
'There is something they can eat'.

(105) *iyo* [*ya* *vaʔa* *kàxi=ndó*] MO
exist CL.IN can.CON eat.CON=2PL.HUM
'There is something you all can eat'.

Both Mixtec languages form the equivalent of the *have* + NP existential construction in English by adding a fronted constituent to the existential predicate, as shown in (106).

(106) *jwán* *tí* [*ña* *kāʔvī=ra*] N
Juan exist.CON CL.IN read.POT=3SG.M
'Juan has something to read'.

(107) *jwā́* *iyo* [*ya* *kaʔvi=ra*] MO
Juan exist.CON CL.IN read.POT=3SG.M
'Juan has something to read'.

The preverbal constituent semantically behaves like the subject of existential *have* in English. Syntactically, though, it is not a subject but rather an oblique, as shown by the lack of a subject clitic on the existential predicate. This is a common way of forming existential constructions across languages (e.g., Latin [ISO code: lat] and Hebrew): *Juan has something to eat* is literally *To Juan there's something to eat* in these languages.

The constituent following the existential predicate does not need to be a relative clause introduced by a classifier. It can be a fully headed relative in either Mixtec language (the head is in boldface):

(108) *jwán* *íí* ***nũ̃ũ̃*** [*kóó=ra*] N
Juan exist.CON place live.POT=3SG.M
'Juan has a place to live'.

(109) *jwán* *íí* ***ĩ̃=na*** [*kūndōtű́ʔű́* *sĩ̄ʔĩ̄=ra*] N
Juan exist.CON one=3.HUM chat.POT with=3SG.M
'Juan has someone who can chat with him'.

(110) *jwā́* *iyo* ***ĩ̃*** ***libru*** [*kaʔvi=ra*] MO
Juan exist.CON one book read.POT=3SG.M
'Juan has a book to read'.

(111) *jwā́* *iyo* ***ĩ̃*** ***veʔe*** [*kusũ=ra*] MO
Juan exist.CON one house sleep.POT=3SG.M
'Juan has a house to sleep in'.

In the examples above, a complex NP that is interpreted as an indefinite NP (often a complex NP containing a relative clause) always follows the existential predicate.[11] FRs can immediately follow the existential predicate as well, forming what we earlier called existential FRs (**3.2**). Existential FRs receive an indefinite-like interpretation as well, which differs from the definite interpretation of the FRs discussed in **4.9**. Below, we present and discuss examples of existential FRs introduced by different wh-words from both Mixtec languages.

5.1. Existential FRs introduced by 'who'. The wh-word for 'who' can introduce existential FRs in both languages:[12]

[11] In both Mixtec languages, what looks like the existential construction can be used to convey the meaning 'to live' as well, in which case the existential predicate can be followed by a definite/referential expression:

(*i*) *yuʔu* *íí* *lājóyá* N
PRN.1SG exist.CON La_Jolla
'I live in La Jolla'.

(*ii*) *iyo* *i* *lorens* MO
exist.CON PRN.1SG Lawrence
'I live in Lawrence'.

[12] Example (112) from Nieves Mixtec and (113) from Melchor Ocampo Mixtec exhibit what is known as "pied-piping with inversion" in the literature on Mesoamerican languages (Aissen 1996 and Gutierrez-Bravo 2010, among others). When a complex wh-phrase made of a preposition and its wh-complement moves (pied-piping), then the preposition has to follow its complement (inversion). Pied-piping with inversion occurs in wh-interrogatives as well, in both Mixtec languages, but it is unacceptable in headed relative clauses introduced by wh-words.

(112) *jwán* *íí* [***yō*** *sī̃ʔī̃* *kūndōtű́ʔű́=ra*] N
Juan exist.CON who with chat.POT=3SG.M
'Juan has someone to chat with'.

(113) *jwá́* *iyò* [***ikú*** ***xiʔi*** *kaʔ=ra*] MO
Juan exist.CON who with talk.POT=3SG.M
'Juan has someone to talk to'.

5.2. Existential FRs introduced by 'what'. The various wh-words roughly corresponding to *what* in English can introduce existential FRs in both Mixtec languages:

(114) *jwán* *kōñáʔā* [***ndyá=ña*** *kusiáʔa=ra*][13] N
Juan NEG.exist.CON what=3.IN eat.POT=3SG.M
'Juan doesn't have anything to eat'.

(115) *iyò* [***ñà'á/ndàkúwá/ɨkúwá*** *ya* *kùnì=ndó*[14]
exist.CON what CL.IN can.CON=3PL.HUM
kàxì=ndō] MO
eat.POT=3PL.HUM
'They have something they can/want to eat'.

(116) *iyo* [***ñà'á/ndàkúwá/ɨkúwá/*ñaa*** *ya* *kuni*
exist.CON what CL.IN can.CON
ra *jwá́* *kaʔvi=ra*] MO
CL.3.M Juan read.POT=3SG.M
'Juan has something he can/wants to read'.

5.3. Existential FRs introduced by 'where'. The wh-word for 'where' can introduce existential FRs in both languages:

(117) *jwán* *kōñáʔā* [***ndyáa*** *kōō=ra*] N
Juan NEG.exist.CON where live.POT=3SG.M
'Juan does not have a place to live'.

(118) *iyò* [***ndáchí*** *kusṹ* *ra* *jwá́*] MO
exist.CON where sleep.CON CL.3SG.M Juan
'Juan has a place to sleep'.

[13] Whenever the existential matrix predicate is given in its negative form in the examples here and below, it means that our consultant found it more acceptable than the corresponding positive form without matrix negation. This is a pattern observed in existential FRs cross-linguistically (Šimík 2011:39–41).

[14] The verb *kuni* in Melchor Ocampo Mixtec can mean 'can' or 'want'.

5.4. Existential FRs introduced by 'when'. In Nieves Mixtec, the wh-word for 'when,' which we saw earlier can introduce definite FRs (**4.5**), can introduce existential FRs as well:

(119) *jwán* *kōñáʔā* [***ndyánāmā*** *kúju=ra*] N
Juan NEG.exist.CON when sleep.POT=3SG.M
'Juan does not have time to sleep'.

In Melchor Ocampo Mixtec, the wh-word for 'when' that occurs in interrogative clauses cannot introduce existential FRs, in the same way that it cannot introduce definite FRs (see **4.5** above):

(120) **jwā́* *koó* [***amakúwa*** *kaʔvi=ra*] MO
Juan NEG when read.POT=3SG.M
('Juan doesn't have time to read'.)

5.5. Existential FRs introduced by 'how'/'why'. The wh-word *ndyīxī* 'how' in Nieves Mixtec can introduce existential FRs:

(121) *jwán* *kōñáʔā* [***ndyīxī*** *kuvaʔa=ra* *ndyāyi*] N
Juan NEG.exist.CON how make.POT=3SG.M mole
'Juan doesn't have a way to make mole'.

The wh-words *àchiká* and *àchìkúwá* in Melchor Ocampo Mixtec can introduce either purpose/reason or manner existential FRs:

(122) *iyò* [***àchiká*** *sìkwa=ì* *mole*] MO
exist.CON how/why prepare.POT=1SG mole
'I have a way to prepare mole' or 'I have a reason to prepare mole'.

(123) *koó* [***àchìkúwá*** *kùʔũ=i* *kà*] MO
NEG how/why go.POT=1SG there
'I have no way to go there' or 'I have no reason to go there'.

In Nieves Mixtec, *navaʔa* 'why' can never introduce an existential FR:

(124) **jwán* *tí* [***navaʔa*** *kuvaʔa=ra* *ndyāyi*] N
Juan exist.CON why make.POT=3SG.M mole
('Juan has a reason to make mole'.)

The ban in Nieves Mixtec on *navaʔa* 'why' resembles what we saw with definite FRs in **4.6** and **4.7** above and follows the cross-linguistic pattern that is attested for both definite and existential FRs—it is rarely the case that the equivalent of the wh-word *why* can introduce either.

TABLE 4
DISTRIBUTION OF WH-WORDS IN EXISTENTIAL FRs IN NIEVES MIXTEC AND MELCHOR OCAMPO MIXTEC

	Who	What	Where	When	How	Why	What + N/ Which + N	How Much/ How Many
N	√	√	√	√	√	*	√	*
MO	√	√	√	*	√	√	√	*

Note: √ = acceptable; * = not acceptable.

5.6. Existential FRs introduced by complex wh-phrases. Complex wh-expressions of the kind *which/what* + N can introduce existential FRs in both languages:

(125) *jwán* *kōñáʔā* [***ndyá*** ***tyīna*** *kujīkī* ***sīʔī̄=****ra*] N
Juan NEG.exist.CON what dog play.POT with=3SG.M
'Juan doesn't have any dogs to play with'.

(126) *iyò* [***nda*** ***nuù*** *koo* *ra* *jwā́*] MO
exist.CON which place live.CON CL.3SG.M Juan
'Juan has a place to live'.

The complex wh-expressions *how much/many* + NP cannot introduce an existential FR in either language—a pattern that is attested cross-linguistically as well:

(127) **jwán* *íí* [***nājāā*** ***ndyāyi*** *kusiáʔa=ra*] N
Juan exist.CON much mole eat.POT=3SG.M
('Juan has an amount of mole to eat'.)

(128) **iyò* [***nasá*** ***lèchè*** (*kúwá*) *kòʔo=i*] MO
exist.CON how_much milk (COP) drink.POT=1SG
('I have a quantity of milk to drink'.)

(129) **iyò* [***nasá*** ***libru*** (*kúwa*) *kaʔv=i*] MO
exist.CON how_many book (COP) read.POT=1SG
('I have a number of books to read'.)

5.7. Summary about existential FRs. Our findings about the wh-words that can introduce existential FRs in Nieves Mixtec and Melchor Ocampo Mixtec are summarized in table 4.

6. *-ever* free relative clauses in Nieves Mixtec and Melchor Ocampo Mixtec. The last kind of FR that is found cross-linguistically is what we labeled *-ever* FRs in **3.2.3**. *-ever* FRs are often characterized by the

presence of an extra element that can occur as an affix on the wh-word or as an independent lexical item close to the wh-word. In English, the suffix *-ever* modifies the wh-word in *-ever* FRs (**3.2.3**).

-ever FRs exhibit two different patterns of distribution and interpretation. They can occur as arguments or PP adjuncts and be close in meaning (and distribution) to NPs introduced by the free choice determiner *any* in English. Examples of *-ever* FRs in English occurring as argument or PP adjuncts were given in **3.2.3** above, together with their paraphrases with NPs introduced by the free choice determiner *any.*

Unlike definite FRs and existential FRs, *-ever* FRs can be introduced by complex wh-phrases in English (and across languages with FRs), as shown by the boldface wh-phrase *whatever book* in (130).

(130) *I'll read* [***whatever book*** *you read*].
(cf. *I'll read any book you read.*)

Finally, like definite FRs and existential FRs, *-ever* FRs cannot be introduced by the wh-word *why* either:

(131) **I'll go to the party* [***whyever*** *you go*].
(cf. *I'll go to the party for any/whatever reason you go.*)

-ever FRs can also occur where clausal adjuncts would occur, sentence-initially or sentence-finally, rather than in argument or PP adjunct position (Izvorski 2000). These *-ever* FRs are close in meaning to *no matter* clausal adjuncts. For instance, the clausal adjunct *-ever* FR in (132*a*) is fronted like the *no matter* clausal adjunct in (132*b*) and the two clausal adjuncts have very close meanings.

(132*a*) [***Whoever*** *you choose*], *I'll hire the person I want.*
(132*b*) [***No matter who*** *you choose*], *I'll hire the person I want.*

Clausal adjunct *-ever* FRs are introduced by the same wh-expressions as the argument/PP-adjunct *-ever* FRs (133–137), including complex wh-phrases (134).

(133) *She can't stand me,* [***whatever*** *I do for her*].
(134) [***Whatever fruit*** *I taste*], *I vomit.*
(135) [*Wherever I go*], *I run into troubles.*
(136) *It rains* [***whenever*** *I decide to go out*].
(137) *My parents complain all the time,* [***however*** *I behave*].

Clausal adjunct *-ever* FRs cannot be introduced by the wh-word *why* (138), as with any other type of FR.

(138) *[***Whyever*** *you did it*], *I won't forgive you.*

Incidentally, *-ever* wh-words or phrases can also occur by themselves without being part of a FR:

(139*a*) *I'll drink* ***whatever (herbal tea)****.*
(139*b*) *We'll talk to* ***whoever****.*
(139*c*) *You can go* ***wherever****.*
(139*d*) *Feel free to come* ***whenever****.*

In the remainder of this section, we show that *-ever* FRs occur in both Mixtec languages, though their patterns differ somewhat. For this reason, we discuss each language separately.

6.1. *-ever* FRs in Nieves Mixtec. Nieves Mixtec has both kinds of *-ever* FRs: the ones behaving like NP arguments or PP adjuncts, and the ones behaving like adverbial clauses. All *-ever* FRs are introduced by wh-words followed by the expression *kūmévā*, whose possible complex morphological nature we leave for future investigation.[15] Examples of *-ever* FRs in Nieves Mixtec behaving like NP argument or PP adjuncts are given in (140)–(144).

(140) *jwán* *kūtóó=ra* [***yō*** ***kūmévā*** *kūtóó* *māríá*] N
Juan like.CON=3SG.M who -ever like.CON Maria
'Juan likes whoever Maria likes'.

(141) *jwán* *sisiáʔa=ra* [***ndyá*** ***kūmévā*** *kuvaʔa*
Juan eat.CON=3SG.M what -ever make.CON
māríá] N
Maria
'Juan eats whatever Maria makes'.

(142) *jwán* *kwáʔã=ra* [***ndyá*** ***kūmēvā*** *kwáʔã* *māríá*] N
Juan go.CON=3SG.M where -ever go.CON Maria
'Juan goes wherever Maria goes'.

(143) *jwán* *kunaka* *kwíʔa=ra* [***ndyánāmā*** ***kūmévā*** *jání*
Juan sit.CON sad=3SG.M when -ever also
māríá *kunaka*] N
Maria sit.CON
'Juan is sad whenever Maria is also feeling that way'.

(144) *jwán* *kuvaʔa=ra* *ndyāyi* [***ndyīxī*** ***kūmévā*** *kíʔā*
Juan make.CON=3SG.M mole how -ever like
māríá *kuvaʔa=ra*] N
Maria make.CON=3SG.LIQ
'Juan makes mole however Maria makes it'.

The wh-word for 'why' cannot introduce *-ever* FRs in Nieves Mixtec, similar to English (cf. 138 above) and to what we observed earlier for definite FRs (**4.7**) and existential FRs (cf. 124 above) in the same language.

[15] Barbara Hollenbach (personal communication) suggests that *kūmévā* could be made up of *kuu* 'be.PRES', *mee/mii* 'self.EMPHATIC', and *va* 'just'.

(145) **jwán kúni=ra kōō=ra [**navaʔa kūmévā***
Juan want.CON=3SG.M go.CON =3SG.M why -ever

māríá kwáʔ=ã] N
Maria takeoff.CON=3SG.F

(‘Juan wants to go for whatever reason Maria is taking off’.)

-ever FRs in Nieves Mixtec can also be introduced by complex wh-phrases containing a wh-word, *kūmévā*, and a noun, as in (146) and (147).

(146) *jwán kúni=ra* [***ndyá tyīna kūmévā***
Juan want.CON=3SG.M what dog -ever

kúni māríá] N
want.CON=3SG.M Maria

‘Juan wants whatever dog Maria wants’.

(147) *jwán kúni=ra* [***nājāā*** *kūmévā tákó íí nũ̃ũ̃*
Juan want.CON=3SG.M how_many -ever taco exist for

māríá] N
Maria

‘Juan want however many tacos Maria has’.

Notice that the wh-word and the following *kūmévā* do not necessarily form a morphological unit since words can occur between them, as shown in (148) (and in 149 and 156 as well).

(148) *jwán kúni=ra* [***ndyá*** *kīrī* ***kūmévā*** *tyīna*
Juan want.CON=3SG.M what CL.ANM -ever dog

kīrī māríá kuni=a] N
CL.ANM Maria want.CON=3SG.F

‘Juan wants whatever dog Maria wants’.

-ever FRs in Nieves Mixtec can serve as adverbial clauses as well. The prefix *ná-* on the embedded verb in (149) and (150) is obligatory and is likely to be a mood marker, as described in Macaulay (1996:76–78). Adverbial *-ever* FRs often occur in a non-indicative mood across languages. Further investigation is needed to fully understand the distribution of *ná-* and its role in Nieves Mixtec.

(149) [***yō*** *sĩ̄ʔĩ̄* ***kūmévá*** *ná-kundotũ̃ʔṹ* *māríá*] *kō-kūtóó*
who with -ever MOOD-chat.POT Maria NEG-like.CON

jwán N
Juan

‘Whoever Maria might chat with, Juan doesn’t like it’.

(150) [***ndyá*** ***kūmévā*** *ná-kāchī* *māríá*] *kō-sinijōʔō*
what -ever MOOD-say.POT Maria NEG-listen.CON

jwán N
Juan

'Whatever Maria might say, Juan does not listen'.

(151) [***ndyá*** ***kūmēvā*** *saʔa* *jwán*] *sīni=ra* *yivi*
where -ever come.CON Juan meet.CON=3SG.M people

saa N
new

'Wherever Juan goes, he meets new friends'.

(152) [***ndyánāmā*** ***kūmévā*** *kwáʔã* *jwán*] *máríá* *sākū=a* N
when -ever go.CON Juan Maria cry.CON=3SG.F

'Whenever Juan takes off, Maria cries'.

(153) [***ndyīxī*** ***kūmévā*** *kuvaʔa* *máríá* *ndyāyi*] *jwán*
how -ever make.CON Maria mole Juan

kusiáʔa=ra=rã N
eat.POT=3SG.M=3SG.LIQ

'However Maria makes the mole, Juan will eat it'.

Like English (cf. 139 above), Nieves Mixtec allows for *-ever* wh-words (i.e., wh-words followed by *kūmévā*) to occur without being part of a free relative clause, but only as NPs or PPs:

(154) *jwán* *kūtóó=ra* [***yō*** ***kūmévā***] N
Juan like.CON=3SG.M who -ever

'Juan likes anybody'. (Lit., 'Juan likes whoever'.)

(155) *jwán* *sisiáʔa=ra* [***ndyá*** ***kūmévā***] N
Juan eat.CON=3SG.M what -ever

'Juan eats anything'. (Lit., 'Juan eats whatever'.)

(156) *jwán* *kúni=ra* [***ndyá*** ***kīrī*** ***tyīna*** ***kūmévā***][16] N
Juan want=3SG.M what CL.ANM dog -ever

'Juan is looking for any kind of dog'. (Lit., 'Juan wants whatever dog'.)

[16] Notice that a constituent interrogative clause with the same sequence wh-word + classifier + noun is unacceptable:

(*i*) **ndyá* *kīrī* *tyīna* *kúni* *jwán*? N
what CL.ANM dog want.CON Juan

('What (kind of) dog does Juan want?')

(157) *jwán* *kwáʔã=ra* [***ndyá*** ***kūmēvā***] N
Juan go.CON=3SG.M where -ever
'Juan goes to any place'. (Lit., 'Juan goes wherever'.)

(158) *jwán* *kunaka* *kwíʔa=ra* [***ndyánāmā*** ***kūmévā***] N
Juan sit.CON sad=3SG.M when -ever
'Juan is sad any time'. (Lit., 'Juan is sad whenever'.)

6.2. *-ever* FRs in Melchor Ocampo Mixtec. Melchor Ocampo Mixtec too has both kinds of *-ever* FRs—the ones behaving like NP arguments or PP adjuncts, and the ones behaving like adverbial clauses. They are all introduced by wh-words followed by the expressions *kuumi*, *kami*, or just *ka* or *mi*. *-ever* FRs in Melchor Ocampo Mixtec are likely to have a complex (cleft-like) syntactic structure and their wh-words a complex morphological structure, which we leave for future investigation. Our main goal here is just to show that Melchor Ocampo Mixtec has *-ever* FRs. Examples of *-ever* FRs that behave like NP arguments are given in (159)–(161), while examples of *-ever* FRs that behave like PP adjuncts are given in (162) and (163).

(159) *kaní* [***ndá*** ***kúúmí*** *na* *kutoo* *jwáʔ*] MO
hit.IMP what -ever CL.3.HUM like.CON Juan
'Hit whoever Juan likes'. (Also, 'Hit whoever likes Juan'.)

(160) *kaní* [***ikú*** ***mí*** *na* *kutoo* *jwáʔ*] MO
hit.IMP who -ever CL.3.HUM like.CON Juan
'Hit whoever likes Juan'. (Also, 'Hit whoever Juan likes'.)

(161) *jwáʔ* *xixi=rá* [***ndá*** ***kúúmí*** *ya* *sìkwa*
Juan eat.CON=3SG.M what -ever CL.IN prepare.CON
ña *maria*] MO
CL.3.F Maria
'Juan eats whatever Maria prepares'.

(162) *jwáʔ* *kwã=rá* [***ndá*** **(*ká*)** *nú* *kwã*
Juan go.CON=3SG.M which -ever place go.CON
ña *maria*] MO
CL.3.F Maria
'Juan goes wherever Maria goes'.

(163) *jwáʔ* *kèʔe=ra* *tìyaʔá* [***achi*** ***kámí*** *kèʔe=ũ*
Juan make.CON=3SG.M salsa how -ever make.CON=2SG
tìyaʔá] MO
salsa
'Juan makes salsa however you make salsa'.

(164) *jwā́ xixi=ra* [***nda kuumi*** *ya sìkwa*
Juan eat.CON=3SG.M what -ever CL.IN prepare.CON
ña maria] MO
CL.3.F Maria
'Juan eats whatever Maria prepares'.

Not surprisingly, the wh-word for 'when' cannot introduce *-ever* FRs in Melchor Ocampo Mixtec, in the same way that it cannot introduce definite FRs (**4.5**) or existential FRs (**5.4**):

(165) **jwā́ kuchiña ini=ra* [***àmàkúwá káamí*** *kuchiña*
Juan sad inside=3SG.M when -ever sad
ini ña maria] MO
inside CL.3.F Maria
('Juan is sad when(ever) Maria is sad'.)[17]

As seen earlier, Melchor Ocampo Mixtec can use several wh-words for 'why', but none can introduce *-ever* FRs:

(166) **jwā́ kuni=ra kūʔū=ra* [***achí/àchiká/àchìkúwá***
Juan want.CON=3SG.M go.POT=3SG.M why
kúúmí *kūʔū ña maria*] MO
-ever go.POT CL.3F Maria
('Juan wants to take off for whatever reason Maria is taking off'.)

-ever FRs can be introduced by complex wh-phrases in Melchor Ocampo Mixtec:

(167) *kaʔví* [***nda kúúmí*** *libru ya tàa ña*
read.CON what -ever book CL.IN write.CMP CL.3.F
maria] MO
Maria
'Read whichever book (that) Maria wrote'.

(168) *jwā́ kuni=ra kuxi=ra* [***nasá kúúmí***
Juan want.CON=3SG.M eat.CON=3SG.M how_many -ever
tako *xi̲xi ña maria*] MO
taco eat.CMP CL.3.F Maria
'Juan wants to eat however many tacos Maria ate'.

[17] One way to render English *-ever* FRs introduced by *when* in Melchor Ocampo Mixtec is by using the same temporal connective *ta* as temporal definite FRs, as shown in (*i*). Notice that adding the marker *ka mi*, which characterizes many *-ever* FRs, makes the sentence unacceptable.

(*i*) *jwā́ kuchiña ini=ra* [***tá*** ***(*kámi)*** *kuchiña ini ña maria* MO
Juan sad inside=3SG.M TEMP -ever sad inside CL.3.F Maria
'Juan is sad when(ever) Maria is sad'.

Finally, *-ever* FRs can also occur as clausal adjuncts in Melchor Ocampo Mixtec:

(169) [***ikú*** ***kamí*** *na* *kuni=ũ* *kani=ű́*]
who -ever CL.3.HUM can.CON=2SG hit.POT=2SG
kãà̃=i *xĩʔ=ũ* MO
talk.POT.NEG=1SG with=2SG
'Whoever you manage to hit, I won't talk with you'.

(170) [***ndáchi*** ***kami*** *ku=ű́*] *kãà̃=i* *xĩʔ=ũ* MO
where -ever go.POT=2SG talk.POT.NEG=1SG with=2SG
'Wherever you go, I won't talk with you'.

Like English (cf. 139 above) and Nieves Mixtec (cf. 154–158 above), Melchor Ocampo Mixtec allows for *-ever* wh-words (i.e., wh-words followed by *kami* or *kummi*) to occur without being part of a free relative clause, but just as NPs or PPs:

(171) *kaní* [***ndá*** ***kamí*** *ná*] MO
hit.IMP what -ever CL.3.HUM
'Hit anybody!' (Lit., 'Hit whoever!')

(172) *ra* *jwã́* *kutoo=ra* [***ndá*** ***kamí*** *na*] MO
CL.M Juan like.CON=3SG.M what -ever CL.3.HUM
'Juan likes anybody'. (Lit., 'Juan likes whoever'.)

(173) *kaʔví* [***ndá*** ***kuùmi*** *libru*] MO
read.IMP what -ever book
'Read any book!' (Lit., 'Read whatever book!')

(174) *kaʔví* [***ndá*** ***kamí***] MO
read.IMP what -ever
'Read anything!' (Lit., 'Read whatever!')

(175) *kwãʔã* [***ndáchí*** ***kuùmi***] MO
go.IMP where -ever
'Go anywhere!' (Lit., 'Go wherever!')

(176) *taa* [***nasá*** ***kuùmi*** ***libru***] MO
write.IMP how_many -ever book
'Write however many books!'

6.3. Summary for *-ever* FRs. Our findings about the wh-words that can introduce *-ever* FRs in Nieves Mixtec and Melchor Ocampo Mixtec are summarized in table 5.

7. Conclusions. In this paper, we have provided a preliminary investigation of some aspects of two previously unstudied Mixtec languages:

TABLE 5
DISTRIBUTION OF WH-WORDS IN *-EVER* FRS
IN NIEVES MIXTEC AND MELCHOR OCAMPO MIXTEC

	Who	What	Where	When	How	Why	What + N/ Which + N	How Much/ How Many
N	√	√	√	√	√	*	√	√
MO	√	?	√	*	√	*	√	√

Note: √ = acceptable; * = not acceptable.

TABLE 6
DISTRIBUTION OF WH-WORDS ACROSS CONSTRUCTIONS IN
NIEVES MIXTEC AND MELCHOR OCAMPO MIXTEC

		Who	What	Where	When	How	Why	What/ Which + N	How Much/ Many
Wh-interrogative clauses	MO	√	√	√	√	√	√	√	√
Headed relative clauses	N	√	*	√/*	*	√	*	n.a.	n.a.
	MO	*	*	√	*	?	?	n.a.	n.a.
Definite FRs				NP/PP	NP/PP	NP/PP	NP/PP		
	N	√	√	*/√	*/√	√/√	*/*	*	√
	MO	√	√	√/√	*/*	√/√	?/?	√	√
Existential FRs	N	√	√	√	√	√	*	√	*
	MO	√	√	√	*	√	√	√	*
-ever FRs	N	√	√	√	√	√	*	√	√
	MO	√	?	√	*	√	*	√	√

Note: √ = acceptable; * = not acceptable; ? = unclear; n.a. = data not available.

Nieves Mixtec and Melchor Ocampo Mixtec. In particular, we have shown that Nieves Mixtec and Melchor Ocampo Mixtec use wh-words not only to form constituent interrogative clauses (and, to a lesser extent, headed relative clauses) but also the three main varieties of FRs that are attested cross-linguistically: definite FRs, existential FRs, and *-ever* FRs. The distribution of the different wh-words in the different constructions in the two languages is summarized in table 6.

Though similar to other languages with FRs in many regards, Nieves Mixtec and Melchor Ocampo Mixtec exhibit at least one interesting peculiarity: they allow for complex wh-phrases like the equivalents of *which* + N and *how much/many* + N to introduce FRs, which is a less common pattern cross-linguistically (Caponigro 2003).

Further work is needed to fully understand the details of FRs in Nieves Mixtec and Melchor Ocampo Mixtec and related constructions. In particular, an in-depth investigation of constituent interrogative clauses and headed relative clauses may help shed further light on aspects of FRs like the morphological structure of wh-words, the way classifiers in the initial position of a clause with a gap work, and the actual syntactic structure of all these constructions.

Our study is the first one to document FRs in a Mixtec language. We plan to continue our investigations and hope that our preliminary results will inspire further work on wh-constructions in Nieves Mixtec and Melchor Ocampo Mixtec and, more generally, in Mixtec languages.

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APPENDIX

FREE RELATIVE CLAUSES IN TWO MIXTEC LANGUAGES

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[*IJAL*, VOL. 79, NO. 1, JANUARY 2013, PP. 61–96]

I. No multiple wh-interrogatives in Nieves Mixtec or Melchor Ocampo Mixtec. Neither Nieves Mixtec not Melchor Ocampo Mixtec allow for a wh-interrogative with more than one wh-word. (A1) and (A2) show that in Nieves Mixtec questioning both the subject and the object at the same time produces an unacceptable string, no matter if only one wh-word (*a* examples) or both (*b* examples) are fronted or if the interrogative clause is matrix (A1) or embedded (A2). The Nieves Mixtec construction closest in meaning to a multiple wh-interrogative in English is what looks like a bi-clausal construction with a conjunction introducing the second wh-word (*c* examples).

(A1*a*) ****yō*** *ni-kuvaʔa* ***ndyáña*** N
who CMP-cook what
('Who cooked what?')

(A1*b*) ****yō*** ***ndyáña*** *ni-kuvaʔa* N
who what CMP-cook
('Who cooked what?')

(A1*c*) ***yō*** *ni-kuvaʔa tyī* ***ndyáña*** N
who CMP-cook and what
'Who cooked and what (did they cook)?'

(A2*a*) **jwán ndākatűʔűʹ=ra* [***yō*** *ni-kuvaʔa* ***ndyáña***] N
Juan ask.CON=3SG.M who CMP-cook what
('Juan is asking who cooked what?')

(A2*b*) **jwán ndākatűʔűʹ=ra* [***yō*** ***ndyáña*** *ni-kuvaʔa*] N
Juan ask.CON=3SG.M who what CMP-cook
('Juan is asking who cooked what?')

(A2*c*) *jwán ndākatűʔűʹ=ra* [***yō*** *ni-kuvaʔa tyī* ***ndyáña***] N
Juan ask.CON=3SG.M who CMP-cook and what
'Juan is asking who cooked and what (they cooked)'.

The same pattern holds for Melchor Ocampo Mixtec, as shown in (A3) and (A4). Questioning both the subject and the object at the same time produces an unacceptable string, whether only

one wh-word (*a* examples) or both (*b* examples) are fronted or whether the interrogative clause is matrix (A3) or embedded (A4).

(A3*a*) ***ìkúnà/ndakúna/naa*** *sàta* ***ñàʔá/ndàkúwá*** MO
who buy.CMP what
('Who bought what?')

(A3*b*) ***ìkúnà/ndakúna/naa*** ***ñàʔá/ndàkúwá*** *sàta* MO
who what buy.CMP
('Who bought what?')

(A4*a*) **jwǎ́ ni-ndakan tun=ra*[1] [***ìkúnà/ndakúna*** *sàta* ***ñàʔá/ndàkúwá***] MO
Juan CMP-ask word=3SG.M who buy.CMP what
('Juan asked who bought what'.)

(A4*b*) **jwǎ́ ni-ndakan tun=ra* [***ìkúnà/ndakúna*** ***ñàʔá/ndàkúwá*** *sàta*] MO
Juan CMP-ask word=3SG.M who what buy.CMP
('Juan asked who bought what'.)

II. Two other strategies to form headed relative clauses in Nieves Mixtec and Melchor Ocampo Mixtec. Both Nieves Mixtec and Melchor Ocampo Mixtec make use of three slightly different relativization strategies. All three share the properties of having a fronted head and a gap. They differ in what immediately follows the head: (*i*) just the predicate of the relative clause (with possible tense markers), (*ii*) a classifier that precedes the relative predicate, or (*iii*) a wh-word (or wh-phrase) that precedes the relative predicate. In section **2.3** in the text, we discuss strategy (*iii*). Here, we briefly describe and give example of the other two strategies.

IIa. Zero-marking headed relative clauses. Zero-marking headed relative clauses are introduced by the head immediately followed by the verbal complex of the relative clause. Example (A5) shows a plain matrix declarative sentence with fronted subject (in boldface) and subject clitic suffix ***=a*** on the verb. If the subject is relativized via the zero-marking strategy, as in (A6), the bracketed string consisting of the relative clause preceded by its head (in boldface) looks identical to the declarative clause in (A5), except for the lack of the verbal subject clitic suffix. No special marker intervenes between the head and verbal complex (which includes the aspectual marker *ni-* as well) in the bracketed relative clause in (A6).

(A5) ***yuū*** *ni-jā-tākwēʔ****=a*** *tyī* *tyaā* N
rock CMP-CAUS-be_hurt =3SG.IN CL.3SG.M man
'The rock hurt the man'.

(A6) [***yuū*** *ni-jā-tākwēʔē* *tyī* *tyaā*] *ni-jā-tākwēʔ=a*
rock CMP-CAUS-be_hurt CL.3SG.M man CMP-CAUS-be_hurt=3SG.IN

jēráldó N
Geraldo
'The rock that hurt the man hurt Geraldo'.

If it is the object that is to be fronted in a matrix declarative clause and, therefore, no clitic suffix is required on the verb, as in (A7), then the corresponding relative clause with a relativized object is virtually identical, as shown in the bracketed string in (A8). No special marker intervenes between the head and verbal complex of this relative clause either.

(A7) ***tyī*** ***tyaā*** *ni-jā-tākwēʔē* *yuū* *káʔnō* N
CL.3SG.M man CMP-CAUS-be_hurt rock large
'The large rock hurt the man'.

(A8) [***tyī*** ***tyaā*** *ni-jā-tākwēʔē* *yuū*] *ni-kānī=rā* *jēráldó* N
CL.3SG.M man CMP-CAUS-be_hurt rock CMP-hit=3SG.M Geraldo
'The man the rock hurt hit Geraldo'.

The same pattern holds in Melchor Ocampo Mixtec. (A9) exemplifies the case of a declarative clause with a fronted subject (in boldface) (and subject clitic suffix ***=ña*** on the verb), while (A10) provides its corresponding subject relative clause.

(A9) ***ña*** ***ñàʔa*** *kaʔvi=**ña*** *uvi* *libru* MO
CL.3.F woman read.CMP=3SG.F two book
'The woman read two books'.

(A10) [***ña*** ***ñàʔa*** *kaʔvi* *uvi* *libru*] *kani=ña* *ra* *karlos* MO
CL.3.F woman read.CMP two book hit.CMP=3SG.F CL.3.M Carlos
'The woman who read two books hit Carlos'.

In the same way as only the wh-phrase can and must be fronted in interrogative wh-clauses, only the relativized constituent, i.e., the head, can and must be fronted in a relative clause. (A11) shows an example of an object relative clause in Nieves Mixtec in which the subject *jwã* is post-verbal. The very same construction becomes unacceptable if the subject is fronted as well, as shown in (A12).

(A11) *tyīna* [*kūtóó* *jwán*] *sasi=ri* *jíʔva* N
dog like.CON Juan eat.CON=3SG.ANM chocolate
'The dog that Juan likes eats chocolate'.

(A12) **tyīna* [*jwán* *kūtóó=ra*] *sasi=ri* *jíʔva* N
dog Juan like.CON=3SG.M eat.CON=3SG.ANM chocolate
('The dog that Juan likes eats chocolate'.)

Melchor Ocampo exhibits a similar contrast, as show in (A13) and (A14).

(A13) *tin̲a̲* [*kùtoo ra jwā́*] *yaxi=ri chòkòlatè* MO
dog like.CON CL.3.M Juan eat.CON=3SG.ANM chocolate
'The dog that Juan likes eats chocolate'.

(A14) **tin̲a̲* [*ra jwā́ kùtoo*] *yaxi=ri chòkòlatè* MO
dog CL.3.M Juan like.CON eat.CON=3SG.ANM chocolate
('The dog that Juan likes eats chocolate'.)

We have found no evidence for internally headed relative clauses in either Mixtec language: a relative clause must always have a gap in both languages. In (A15), we constructed an internally headed relative clause corresponding to the Nieves Mixtec externally headed relative in (A6). The bracketed internally headed relative clause in (A15) has no gap, since the object (in boldface) is not sentence-initial (unlike in the corresponding externally headed relative clause) but in the standard post-verbal and post-subject position. The string in (A15) is completely unacceptable.

(A15) *[*ni-jā-tākwēʔē yuū* ***tyī tyaā***] *ni-kānī=rā jēráldó* N
CMP-CAUS-be_hurt rock CL.3SG.M man CMP-hit=3SG.M Geraldo
('The rock that hurt the man hurt Geraldo'.)

The same restriction holds for Melchor Ocampo Mixtec. (A16) shows the internally headed relative clause corresponding to the externally headed relative clause in (A13). The string in (A16) is completely unacceptable.

(A16) *[*kùtoo ra jwā́* ***tin̲a̲***] *yaxi=ri chòkòlatè*[2] MO
like.CON CL.3.M Juan dog eat.CON=3SG.ANM chocolate
('The dog that Juan likes eats chocolate'.)

IIb. Classifier-marking headed relative clauses. In both languages, headed relative clauses may also be introduced by a pronoun/classifier that occurs right after the relative head and agrees in noun class with it. In (A17) and (A18), the pronouns/classifiers *kīrī* and *ti* immediately follow the head *tyīna* and precede the verb of the relative clause.

(A17) *jwán kúni=ra tyīna* [***kīrī*** *sasi jíʔva*][3] N
Juan want.CON=3SG.M dog CL.ANM eat.CON chocolate
'Juan wants the dog, which eats chocolate'. (APPOSITIVE INTERPRETATION)
'Juan wants the dog that eats chocolate'. (RESTRICTIVE INTERPRETATION)

(A18) *sàte=i burro* [***ti*** *yaxi chòkòlatè*] MO
buy.CMP=1SG donkey CL.ANM eat.CON chocolate

'I bought the donkey, which eats chocolate'. (APPOSITIVE INTERPRETATION)
'I bought the donkey that eats chocolate'. (RESTRICTIVE INTERPRETATION)

Our preliminary findings seem to show that headed relative clauses introduced by classifiers can be either restrictive or appositive, while headed relative clauses without a classifier are only restrictive. But further investigation is needed.

Both languages also allow for a type of relative clause introduced only by the classifier/pronoun, which is reminiscent of Citko's (2004) "light-headed relative clauses," as shown in (A19)–(A23).

(A19) ***na*** *ni-kuvaʔa ndyāyi* N
CL.HUM.PL CMP-make mole
'those that made the mole'

(A20) ***kīrī*** *sasi chōkōláté* N
CL.ANM eat.CON chocolate
'the animal that eats chocolate'

(A21) *jwán sīni=ra* [***tyī*** *ni-jā-tākwēʔē yūchu*] N
Juan know.CON=3SG.M CL. 3SG.M CMP-CAUS-be_hurt knife
'Juan knows the guy who the knife hurt'.

(A22) ***na*** *sìkwa̲ʔà tìyaʔá* MO
CL.HUM.PL prepare.CMP salsa
'those (people) who prepared the salsa'

(A23) ***kiti*** *yaxi chòkòlatè* MO
CL.ANM eat.CON chocolate
'the animal that eats chocolate'

It has been claimed for other Mixtec languages that the presence or absence of the classifier in a headed relative clause distinguishes appositive and restrictive relative clauses. Hills (1990) claims that the pronoun marks a restrictive relative in Ayutla Mixtec. Shields (1988) claims that the pronoun marks an appositive relative clause in Silacayoapan Mixtec. In Nieves Mixtec and Melchor Ocampo Mixtec, headed relatives introduced by classifiers can be restrictive, as shown in (A19)–(A23) above, or appositive, as shown in (A24) and (A25) below.

(A24) *jwán ni-kānī=rā jēráldó* [***tyī*** *ni-kāʔvī tyútyú*] N
Juan CMP-hit=3SG.M Geraldo CL. 3SG.M CMP-read book
'Juan hit Geraldo, who read the book'.

(A25) *kan=i ra jeraldo* [***ta*** *kaʔvi libru*] MO
hit.CMP=1SG CL.3.M Geraldo CL.3.M read.CMP book
'I hit Geraldo, who read the book'.

[1] The verbal complex *ndakan tun* in Melchor Ocampo Mixtec is made up of a verb and noun but seems to behave like a unit, based on the occurrence of the person agreement suffix on the noun rather than the verb.

[2] This string is acceptable if parsed as consisting of two separate sentences (one being the bracketed string, the other the string that follows). It would then be interpreted as meaning 'Juan likes the dog. It eats chocolate'.

[3] The constituency we are assigning to this example, with *tyīna* the head of a relative clause introduced by *kīrī*, is further supported by the fact that (*i*) is unacceptable, which shows that *tyīna kīrī* cannot form an NP:

(*i*) **tyīna kīrī sasi=ri jíʔva* N
dog CL.ANM eat.CON=ANM chocolate
('The dog eats chocolate'.)